

**REMARKS**

At the outset, Applicants wish to thank the Examiner for the courtesy accorded to their undersigned representative during the course of a telephone interview held in the above-identified case on June 3, 2004. While no agreement was reached as a result of the interview, the currently pending claims and the art currently of record were discussed generally. It is Applicants' understanding that the Examiner acknowledged that there appear to be differences between the cited art and the invention disclosed in the present application, but also took the position that as presently written the claims were too broadly stated to define over the cited art. Further, the Examiner informed Applicants' undersigned representative that his search to date has not been focused on the features of the present invention emphasized as being different from the cited art in Applicants' Remarks accompanying the previously filed Amendment in this application in view of the breadth of the actual claim wording heretofore asserted.

In response to the FINAL Official Action currently outstanding with respect to the above-identified application, Applicants concurrently herewith are filing a Request for Continued Examination, and respectfully request that the finality of the currently outstanding Official Action be withdrawn, and that the subject application be amended as set forth hereinabove prior to the further consideration of the claims thereof by the Examiner.

Claims 1-33 were pending at the time of the issuance of the currently outstanding Final Official Action. By the foregoing Amendment Applicants have amended Claims 1, 13, 14, 16 and 24. No Claims have been added, and no claims have been canceled. Accordingly, upon the entry of the foregoing amendment, the claims remaining under active prosecution in this application will be Claims 1-33 as hereinabove amended. The text of these claims, along with an appropriate indicator of the status of each, is set forth hereinabove as required by the Rules.

In the currently outstanding FINAL Official Action, the Examiner has:

1. Acknowledged Applicants' claim for foreign priority under 35 USC 119(a)-(d) or (f), and confirmed the receipt of the required copies of the priority documents by the United States Patent and Trademark Office;
2. Indicated that the drawings as filed on August 8, 2001 as part of this application are acceptable;
3. Provided Applicants with a copy of a Notice of References cited (Form PTO-892) along with copies of each of the newly cited references;
4. Provided Applicants with copies of the Forms PTO-1449 that accompanied their Information Disclosure Statements in the above-identified application duly signed, dated and initialed by the Examiner to confirm his consideration of the art listed therein;

5. Rejected Claims 1, 3, 7, 8 and 10-13 under 35 USC 102(e) as being anticipated by the Yamazaki reference (U.S. Patent No. 6,522,319);
6. Rejected claims 2, 14 and 15 under 35 USC 103(a) as being unpatentable over the Yamazaki reference;
7. Rejected claims 4-6, 9 and 16-24 under 35 USC 103(a) as being unpatentable over the Yamazaki reference in view of the Proebsting reference (U.S. Patent No. 6,064,250);
8. Rejected Claims 25-27, 29-31 and 33 under 35 USC 103(a) as being unpatentable over the Ymazaki et al reference in view of the Akiyama reference (US Patent 5,977,940);
9. Rejected Claims 23 and 28 under 35 USC 103(a) as being unpatentable over the Yamazaki reference in view of the Proebsting reference in view of the Akiyama reference;
10. Failed to specifically comment upon Claim 32 (it is assumed for purposes of this response that Claim 32 was intended to be rejected for the same reasons as claims 29-31 and 33 were rejected); and
11. Cited various references as being pertinent to Applicants' disclosure, but failed to apply any of those references against any of the presently pending claims.

No further comment is deemed necessary in these Remarks regarding items 1-4 and 11 above.

With respect to the Examiner's substantive rejections as summarized in items 5-10 above, Applicants again respectfully note that a claim is anticipated only if each and every element as set forth in the claim is found, either expressly or impliedly, in a single prior art reference. On the other hand, Applicants also note that a claim is obvious within the meaning of 35 USC 103(a) only when (1) there is a suggestion or motivation to modify the teachings of the cited references in the references themselves or in the knowledge generally available to those skilled in the art, (2) when there is a reasonable expectation of the success of such a combination, and (3) the cited prior art teaches or suggests all of the claimed limitations, it being assumed that the teaching or suggestion of the combination and the reasonable expectation of success are not derived from the applicants' specification.

Applicants respectfully submit that independent Claims 1 and 13 (and hence the claims that depend thereon as well) clearly define over the Yamazaki reference with respect to whether or not charge-pump operation is active or not during the hold mode. In this regard, attention is respectfully directed to the foregoing amendments to Claims 1 and 13 wherein it is specified that the power supply operates at a first frequency in the scanning mode of the device and at a second non-zero frequency smaller than the first frequency in the hold mode of the device.

Further. Applicants respectfully submit that independent Claims 14 and 24 (and the claims that depend thereon as well) also define over the cited references in that each of those claims comprises a smoothing capacitor. In this respect, attention is respectfully directed to the foregoing amendments to Claims 14 and 24 wherein it now is specified that in the hold mode the pump operation of the power supply is stopped and a smoothing capacitor is connected between an input to the drivers and an output of the power supply.

Applicants respectfully submit that neither of the features specified by the foregoing amendments is anticipated by, or rendered obvious in view of, any of the art currently of record in this prosecution under the standards summarized above.

More specifically, the invention as set forth in Claims 1 and 13 of the present invention changes the frequency of pump operation depending upon whether or not the operational status of the device is in its scan or its hold mode. For example, as discussed at page 18, line 19 to page 19, line 2 of the present specification, the charge-pump power supply operates even in the hold mode at a lower frequency than in the scanning mode. As a result, the device suppresses an undesirable voltage drop in the hold mode while at the same time less power is consumed in the hold mode than in the scanning mode. Applicants respectfully submit that these features clearly are not to be found in the Yamazaki reference.

The invention as presently claimed in Claims 14 and 24, on the other hand, comprises a smoothing capacitor. With this smoothing capacitor connected in the manner now specifically set forth in the Claims, an output voltage value of the power supply can be maintained between the output of the power supply and the input to the drivers even in the hold mode. In contrast to this, in the Yamazaki reference, the operation of the charge-pump circuit is simply stopped when that device is in its hold mode (See, Claim 18 and Column 31, lines 49-63 of the Yamazaki reference). Hence, the Yamazaki reference has no reason to comment upon, and therefore is totally silent concerning, the operation of the charge-pump circuit disclosed therein at low frequency and/or the provision of a smoothing capacitor in order to supply a non-scanning voltage in its hold mode (See, page 14, lines 1-10 of the present specification).

In the latter regard, Applicants respectfully particularly note that the device disclosed in the Yamazaki reference switches between capacitors maintained at various potential levels in its scanning mode, but is turned off in its hold mode with no provision for the maintenance of a potential between the output of the power supply and the input of the drivers. Accordingly, the fact alluded to by the Examiner that the Yamazaki reference utilizes capacitors in the course of driving the drivers is inapposite to the use of a smoothing capacitor at the location specified in this application in the hold mode of the device.

Further, Applicants respectfully submit that the present invention also differs from the Yamazaki reference both with respect to the definition of the scanning mode itself, and as to whether or not the vertical synchronization period is extended. More particularly, it will be understood that the object of the Yamazaki reference (unlike that of the present invention) is to provide an electro-optical apparatus that does not allow a driving-voltage forming circuit to become complicated for the partial display functions therein desired. For this reason, Yamazaki allows the size and position of his partial display to be determined by software in a manner that he believes to improve the general usability of his apparatus (See, Yamazaki at Column 6, lines 32-40).

Still further, as described at Yamazaki, Column 18, lines 29-40 in conjunction with his Fig. 3, it will be seen that only some of the scanning electrodes (i.e., only Y1-Y40 out of the group Y1-Y200 in Fig. 3) are scanned during one vertical scanning period (designated 200H). In contrast, in the image display device of the present invention, the hold mode is inserted into the scanning mode (which is an operational mode under normal driving conditions) so as to increase the length of the vertical scanning period relative to its length under normal scanning conditions so as to thereby scan the entire screen.

Additionally, it is respectfully submitted that the Examiner's proposed combination of the Yamazaki and Akiyama references is not appropriate under the above-summarized standards to be applied to a decision concerning the patentability of specific claims. The reason for this is that Applicants have found no motivation in either the Yamazaki or the Akiyama references that teaches, discloses or suggests their combination (i.e., there is no suggestion within the "four corners" of the art relied upon by the Examiner that would cause one skilled in the art at the time the present invention was made to make the combination upon which the Examiner presently relies). Applicants respectfully suggest that this is not surprising because the Yamazaki and Akiyama references disclose distinctly different pixel structures and distinctly different driving methods associated therewith.

More specifically, the Akiyama reference discloses a structure in which "(e)ach pixel of a liquid crystal display device comprises a memory portion for outputting an analog signal corresponding to the data signal, and a circuit for supplying an AC voltage corresponding to the analog signal to the liquid crystal layer. The liquid crystal layer is driven with a data signal stored in the memory portion or with an AC voltage corresponding to an analog signal corresponding to the data signal. With the signal stored in the memory portion, an AC voltage whose effective value or average value is controlled is supplied to the liquid crystal layer." Applicants respectfully submit that it is self evident that the structure just described is significantly different from structures such as that shown for example in Fig. 23 of the Yamazaki reference.

The present invention also discloses a pixel driving method that is clearly distinct from the Akiyama reference. This is submitted to be self evident from that fact that the present invention discloses a structure in which "the power save signal PS switches the operation mode of the counter electrode driving circuit 8 between the scanning mode and the hold mode."

Accordingly, Applicants respectfully submit that the foregoing Amendments and related discussion clarify and distinctly indicate features of the present invention that were inherent in the claims as filed and which also are not disclosed, taught or suggested by the references cited and applied by the Examiner in this application. Therefore, for each and all of the foregoing reasons and in light of the foregoing Amendment, Applicants respectfully submit that the bases for the Examiner's previous FINAL rejections no longer apply to the claims of this application, and that this application now is in condition for allowance. A decision so holding and allowing Claims 1-33 as hereinabove amended in response to this communication, therefore, is respectfully requested.

Applicants also believe that additional fees beyond those submitted herewith are not required in connection with the consideration of this response to the currently outstanding Official Action. However, if for any reason a fee is required, a fee paid is inadequate or credit is owed for any excess fee paid, you are hereby authorized and requested to charge and/or credit Deposit Account No. **04-1105**, as necessary, for the correct payment of all fees which may be due in connection with the filing and consideration of this communication.

Respectfully submitted,

Date: June 24, 2004

By: David A. Tucker  
David A. Tucker  
Reg. No. 27,840

Edwards & Angell, LLP  
P.O. Box 9169  
Boston, MA 02209-4280  
(617) 517-5508  
448198